



HPS-4/HPS-6

HIGH POWER SPEAKER SELECTION SYSTEM



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HPS-4/ HPS-6

High Power Speaker Selector System

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Introduction

The HPS series allows you to connect multiple pairs of speakers to your stereo receiver or amplifier and play any one pair, any combination of pairs, or all pairs at once. You don't have to worry about overloading your amplifier. The HPS-4 and HPS-6 have a protection circuit that keeps your amplifier running safely, even if you have all pairs of speakers playing at the same time.

Balancing Speaker Volume

The volume control on your receiver or amplifier serves as the "master" volume for all speaker pairs connected.

The volume level of the speakers may vary from room to room. This is caused by several factors. Two lesser factors are the size of the speaker and its efficiency. The largest factor is the physical size of the room.

The best way to balance speaker volume is to equip each of the speaker pairs in your system with a Niles volume control. The controls allow you to adjust the volume of each speaker pair individually. If all the speaker pairs in your system are equipped with Niles volume controls, you can leave the amplifier or receiver volume set at one position and use the Niles controls exclusively.

SPECIFICATIONS

Audio Power Handling

250 watts/channel
continuous music
power

Frequency Response

+0 dB, -0 dB (flat) from
20 Hz to 20 kHz

Mounting

Table-Top component

Wiring Requirements

Individual runs of
2-conductor speaker
wire. Connectors
accommodate wire
sizes 14-22 gauge (16
gauge recommended)

Overall Dimensions

17" wide x 2" high x
8-3/4" deep

Weight

4-1/2 lb.

Installation Considerations

Power Handling

The HPS series is designed for use with a receiver or amplifier having a maximum power output of 250 watts per channel at 8 ohms. Damage caused by the use of a higher-power receiver or amplifier will void the warranty. Consult your Niles dealer, or receiver/amplifier manufacturer, if you are uncertain about the power rating of your receiver or amplifier.

Amplifier Impedance Load

As more pairs of speakers are parallel connected to a receiver or amplifier, the overall system impedance becomes lower. For example, if two pairs of 8-ohm speakers are connected in parallel, the impedance will be 4 ohms; two pairs of 4-ohm speakers in parallel become 2 ohms, and so on.

Most receivers or amplifiers are not rated for use below a 4 ohm load. Most manufacturers do not recommend connecting more than two pairs of speakers without using some form of impedance correction.

The HPS series includes impedance correction circuitry which protects your receiver or amplifier from low impedance loads. The circuitry assures that your receiver or amplifier will see a safe operating load, even when all four speaker pairs are playing at the same time.

The actual impedance load the speaker selector presents to your receiver or amplifier will vary, depending on how many speaker pairs are playing, and the impedance rating of each speaker. If you have four pairs of 8-ohm speakers playing, the HPS-4/HPS-6 series will present a 4.5 ohm impedance load to

3. Locate the on/off buttons on the HPS-4/HPS-6 which correspond to the speaker pairs you wish to play. Set them to the ON position (Engaged).
4. Turn on the amplifier or receiver and select a source, such as the tuner or CD player.
5. Slowly turn up the amplifier or receiver volume and set it to a comfortable (not maximum) listening level. Be careful not to overdrive or "clip" your amplifier. If the sound becomes muddy or distorted, you have reached the limit of your amplifier's volume capability and should quickly reduce the volume to avoid damaging your speakers.

"TECH TIP"

You will need to activate the HPS-4/HPS-6's protection button whenever the overall system impedance might fall below 4 ohms.

When playing the following speakers:	The Protection button should be:
1 or 2 pairs of 8-ohm speakers	OFF
3 or more pairs of 8-ohm speakers	ON
1 pair of 4-ohm speakers	OFF
2 or more pairs of 4-ohm speakers	ON
Any combination of 4 and 8 ohm speakers	ON

Set the PROTECTION button to the correct position using the chart shown above.

Using the HPS Series with Tube-Type Amplifiers

Virtually all tube amplifiers must have a load connected at all times. If the amplifier to be connected to the HPS-4/HPS-6 is a tube amplifier, be sure to always have at least one pair of speakers switched on at all times. An alternative is to permanently connect a 150 ohm, 5 watt resistor across the tube amplifier's output in parallel with the HPS-4/HPS-6. See (Figure 1).

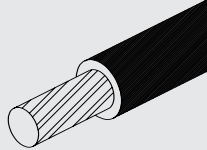
Installation

1. Select a convenient mounting location.
2. Run all the necessary. Label the wires for future reference. See (Figure 2).
3. Make the connections to the speaker selector. The amplifier/speaker connectors on the HPS are removable. If you wish, you may remove the HPS's connectors to facilitate installation see (Figure 3). Strip 3/8" of insulation from the end of each wire. Tightly twist the end of each wire until there are no frayed ends. Insert each wire into the appropriate hole on the connector terminals. Be certain that proper phasing is observed—connect the positive terminals on the HPS to the positive terminals on the amplifier and speakers and the negative terminals on the HPS to the negative terminals on the amplifier and speakers. Re-install the connectors if they were removed. See (Figure 4).

Insert the connector plug into the socket and lock in place by tightening captive screws on each side of connector.

4. Affix the appropriate label to the recessed area over each on/off selector button.

"Tech Tip"



Wire size is expressed by it's AWG (American Wire Gauge) number. The lower the AWG number, the larger the wire, i.e., 12 AWG wire is physically larger than 14 AWG.

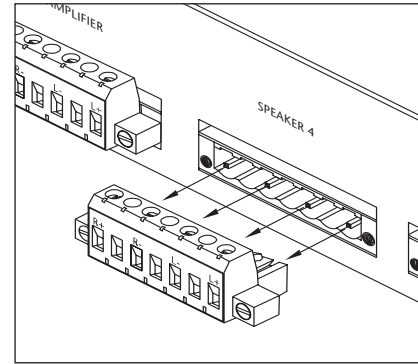


Figure 3
Removing the Connectors

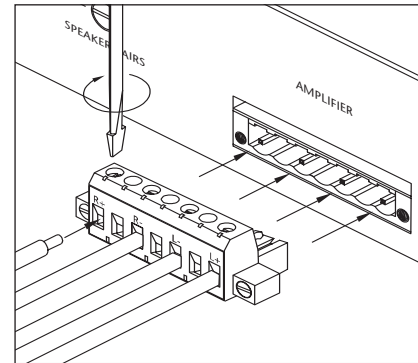


Figure 4
Installing the Connectors

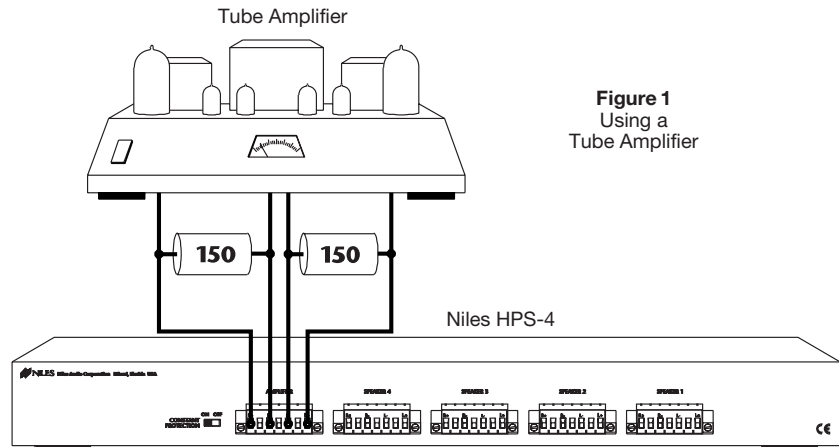
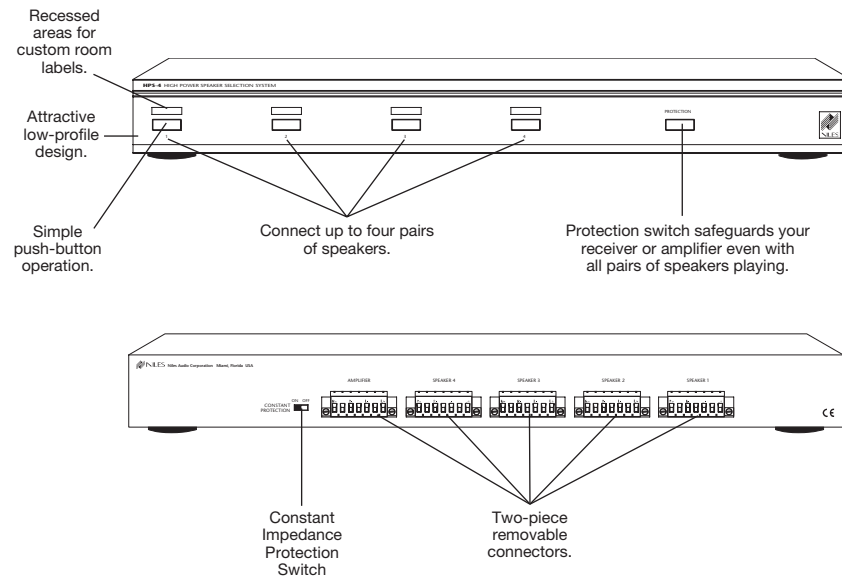


Figure 1
Using a
Tube Amplifier



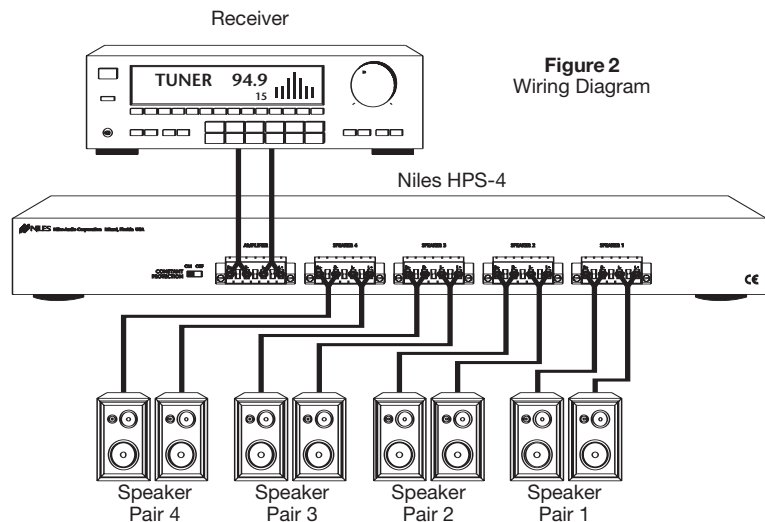


Figure 2
Wiring Diagram

Operation

There are two ways to use the HPS-4/HPS-6. You may play one pair of speakers at a time, or play multiple pairs simultaneously.

If you intend to play more than one pair of speakers at the same time, you will need to become familiar with the operation of the PROTECTION button.

Playing One Pair of Speakers At a Time

1. Make sure the amplifier or receiver power is OFF and set the volume to minimum.
2. Locate the on/off button on the HPS-4/HPS-6 which corresponds to the speaker pair you wish to play. Set it to the ON position (Engaged).
3. Turn on the amplifier or receiver and select a source, such as the tuner or CD player.
4. Slowly turn up the amplifier or receiver volume and set it to a comfortable (not maximum) listening level. Be careful not to overdrive or "clip" your amplifier. If the sound becomes muddy or distorted, you have reached the limit of your amplifier's volume capability and should quickly reduce the volume to avoid damaging your speakers.
5. To turn off the speaker pair, simply press the corresponding on/off button on the HPS-4/HPS-6.

“TECH TIP”

If your amplifier or receiver has “A” and “B” speaker-pair outputs, connect the speaker selector to the “A” outputs. Do not connect anything to “B”. This will prevent the amplifier or receiver from driving an unusually low impedance load.

Playing Two or More Speaker Pairs Simultaneously

1. Make sure the amplifier or receiver power is OFF and set the volume to minimum.
2. On the right side of the HPS-4/HPS-6’s front panel is a button labeled PROTECTION. This button activates the HPS-4/HPS-6’s impedance correction circuitry. The circuitry assures that your receiver or amplifier will see a safe operating load when playing multiple speaker pairs simultaneously. Since most receivers and amplifiers are not rated for use below a 4 ohm load, you will need to activate the Protection button whenever the overall system impedance might fall below 4 ohms. Use the following chart as a guide for setting the Protection button.

your receiver/amplifier. With six pairs of 4-ohm speakers playing, the load drops to slightly under 4 ohms.

If you intend to use the HPS series with more than two pairs of 4-ohm speakers, it is recommended that you verify that the receiver or amplifier is capable of driving a 4-ohm load. Consult your Niles dealer, or receiver/amplifier manufacturer, if you are uncertain about the capabilities of the receiver/amplifier.

Type of Speaker Wire

For most applications, we recommend you use 16 or 18 gauge, stranded copper speaker wire for the HPS-4/HPS-6 connections. For wiring runs longer than 80 feet, 14 gauge wire is recommended. Using speaker wire larger than 14 gauge for the HPS-4/HPS-6 connections is not recommended—the wire may not fit into the connectors. Never use solid-core, aluminum, or “Romex” type wire with the HPS-4/HPS-6. When running speaker wires inside walls, most states and municipalities in the U.S. specify that you must use a special type of speaker wire. Usually, the requirement is that the wire has a specific “CL” fire rating, such as “CL-2” or “CL-3”. Consult your Niles dealer, building contractor, or local building and inspection department if unsure about which type of wire is best for your application.

Avoiding Interference

Speaker wires can act as an “antenna” for electrical noise. Locating speaker wires too close to a light dimmer or switch may cause a “buzzing” or “popping” sound to be heard through the speakers. If you must locate the HPS-4/HPS-6 wiring near electrical devices, route the speaker wires several feet away from the electrical wiring.

Tools Required

- 1/8” Standard Slotted Screwdriver
- Wire Stripper

6. To turn off one or more speaker pairs, simply press the corresponding on/off button(s) on the speaker selector. Refer to the protection chart for the correct setting of the Protection button.

Constant Protection Switch

The HPS-4/HPS-6 is equipped with a manual override for the protection circuit that enables you to defeat the front panel protection switch and maintain constant impedance protection. This will safeguard your amplifier from being overdriven due to accidental or improper use by anyone unfamiliar with the equipment.

To engage this override, move the rear panel "Constant Protection" switch to the "On" position. Constant impedance protection will be maintained until the switch is turned to "Off".

Features and Benefits

The HPS-4 and HPS-6 offer a number of improvements over other speaker selectors:

- Power handling: 250 watts per channel RMS
- Protection circuit safeguards receiver/amplifier
- Separate left and right ground paths for compatibility with all amplifiers
- Rear-panel switch for constant or selectable impedance protection
- Removable connectors accommodate up to 12 gauge wire
- Rugged all metal chassis construction
- Non-skid feet won't scratch furniture and ensure unit stability during operation
- 72 adhesive-backed room identification labels
- Requires an amplifier that is compatible with a 4 ohm load
- Warranty: Ten-year limited
- Dimensions: 17" wide x 2" high x 8-5/8" deep
- Shipping weight: approximately 7 lbs

TECH SUPPORT HOTLINE

If you have questions regarding the operation of the Niles HPS series, contact your local Niles dealer or Niles Technical Support at 1-800-289-4434.